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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/828,140 | 04/09/2001 | Yoko Kawata | H-980 | 5960 |
| 24956 | 7590 | 07/13/2005 | EXAMINER | |
| MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C. 1800 DIAGONAL ROAD SUITE 370 ALEXANDRIA, VA 22314 | | | NGUYEN, THANH | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2144 | |

DATE MAILED: 07/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/828,140

Applicant(s)

KAWATA ET AL.

Examiner

Tammy T. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE (3) MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____



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Detailed Office Action

1. This action is in response to the amendment filed on January 6, 2005.
2. Claims 11-19 are newly added.
3. Claims 1-10 are pending.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brendel et al., (hereinafter Brendel) U.S. Patent No. 5,774,660 in view of Agrawal et al., (hereinafter Agrawal) U.S. Patent No. 6,606,661.
6. As to claim 1, Brendel teaches the invention as claimed, including a load balancer

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connected to a network connecting a plurality of clients requesting services and a plurality of servers executing operations based on said requests from said clients and replying with processing results comprising: means for examining header information in request data from said client (Fig.7, and col.8, lines 44-55); means for estimating, based on said header information and contents of said request data, processing load resulting from execution by said servers (col.10, lines 20-38); means for storing totals of said load estimates over a fixed past period for each of said servers (col.11, lines 50-65 and col.12, lines 30-40); and means for forwarding said request data to said servers (col.11, lines 36-49, col.11, line 64 to col.12, line 5, and col.14, lines 45-50). But Brendel does not teach dynamically selecting a server to which request data is to be sent based on estimates of processing load on server and total load for servers. However, Agrawal teaches dynamically selecting a server to which request data is to be sent based on estimates of processing load on server and total load for servers (Abstract, and col.2, lines 30-46). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of Brendel and Agrawal to have dynamically selecting a server to which request data is to be sent based on estimates of processing load on server and total load for servers because it would have an efficient system that can provide specific functions in order servers do not run out of resources under the current measured load.

7. As to claim 2, Brendel teaches the invention as claimed, further comprising: means for identifying a requested service type from said header of said request data (col.10, lines 20-33). But Brendel does not teach estimating processing load on said servers based on said service type. However, Agrawal teaches estimating processing load on said servers based on said service type (Abstract, and col.2, lines 30-46). It would have been obvious to one of ordinary

skill in the art at the time of the invention was made to combine the teachings of Brendel and Agrawal to have estimating of processing load on server based on service type because it would have an efficient system that can provide specific functions in order servers do not run out of resources under the current measured load.

8. As to claim 3, Brendel teaches the invention as claimed, further comprising: means for calculating requested data size based on said request data header and information about content data in said servers (Fig.7, col.10, lines 20-33); and means for estimating processing load on said servers based on said request data size (col.10, lines 1-6).

9. As to claim 4, Brendel teaches the invention as claimed, further comprising: means for identifying program types to be executed by said servers based on said request data header; and means for estimating processing load on said servers based on execution of said Programs (fig.7, and col.10, lines 20-33).

10. As to claim 5, Brendel teaches the invention as claimed, including a server load estimation method using an information processing device connected to a server and a client sending a service request packet to said server comprising the following steps: requesting access to all services and all content data that can be provided by said server (Fig.2, and col.2, lines 59-67); server load resulting from request data from said client based on a header of said request data (col.10, lines 20-53, and col.12, lines 30-45).

But Brendel does not teach measuring processing load on server associated with request.

However, Agrawal teaches measuring processing load on server associated with request (Abstract, col.3, lines 43-57). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of Brendel and Agrawal to have

measuring processing load on server associated with request because it would have an efficient system that can provide specific functions in order servers do not run out of resources under without of the current measured load.

11. As to claim 6, Brendel does not teach the invention as claimed, wherein, in said step for measuring processing load on said server, server processing load is estimated by measuring response time between when said client sends said service request packet and when a service response packet is received. However, Agrawal teaches measuring processing load on said server, server processing load is estimated by measuring response time between when said client sends said service request packet and when a service response packet is received (Abstract, col.3, lines 43-57). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of Brendel and Agrawal to have measuring processing load on server associated with request because it would have an efficient system that can provide specific functions in order servers do not run out of resources under without of the current measured load.

12. As to claim 7, Brendel teaches the invention as claimed, wherein, in said step for measuring processing load on said server, server processing load is estimated by measuring CPU load when said server receives said service request packet and executes an operation based on said request (col.9, lines 30-40).

13. As to claim 8, Brendel teaches the invention as claimed, including a computer-readable storage medium storing a program for implementing a method for estimating server load using an information processing device connected to a server and a client for sending a service request packet to said server, said method including the following steps: requesting

access to all services and all content data that can be provided by said server (Fig.2, and col.2, lines 59-67); server load resulting from request data from said client based on a header of said request data (col.10, lines 20-53, and col.12, lines 30-45).

But Brendel does not teach measuring processing load on server associated with request.

However, Agrawal teaches measuring processing load on server associated with request (Abstract, col.3, lines 43-57). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of Brendel and Agrawal to have measuring processing load on server associated with request because it would have an efficient system that can provide specific functions in order servers do not run out of resources under without of the current measured load.

14. As to claim 9, Brendel teaches the invention as claimed, including a load balancing method using a processing device connected to a network connecting a plurality of clients requesting services and a plurality of servers executing operations based on said requests from said clients and replying with results from said operations, said method comprising the following steps: examining header information in request data from said client (Fig.7, and col.8, lines 44-55); estimating, based on said header information and contents of said request data, processing load resulting from execution by said servers (col.10, lines 20-38); storing totals of said load estimates over a fixed past period for each of said servers (col.11, lines 50-65 and col.12, lines 30-40); and forwarding said request data to said servers (col.11, lines 36-49, col.11, line 64 to col.12, line 5, and col.14, lines 45-50).

But Brendel does not teach dynamically selecting a server to which request data is to be sent based on estimates of processing load on server and total load for servers. However, Agrawal

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teaches dynamically selecting a server to which request data is to be sent based on estimates of processing load on server and total load for servers (Abstract, and col.2, lines 30-46). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of Brendel and Agrawal to have dynamically selecting a server to which request data is to be sent based on estimates of processing load on server and total load for servers because it would have an efficient system that can provide specific functions in order servers do not run out of resources under the current measured load.

15. As to claim 10, Brendel teaches the invention as claimed, including a computer readable storage medium storing a program for implementing a method for estimating server load using an information processing device connected to a plurality of clients requesting services and a plurality of servers executing operations based on requests from said clients and replying with results from said operations, said method including the following steps: examining header information in request data from said client (Fig.7, and col.8, lines 44-55); estimating, based on said header information and contents of said request data, processing load resulting from execution by said servers (col.10, lines 20-38); storing totals of said load estimates over a fixed past period for each of said servers (col.11, lines 50-65 and col.12, lines 30-40); and forwarding said request data to said servers (col.11, lines 36-49, col.11, line 64 to col.12, line 5, and col.14, lines 45-50). But Brendel does not teach dynamically selecting a server to which request data is to be sent based on estimates of processing load on server and total load for servers. However, Agrawal teaches dynamically selecting a server to which request data is to be sent based on estimates of processing load on server and total load for servers (Abstract, and col.2, lines 30-46). It would have been obvious to one of ordinary skill in the art at the time of

the invention was made to combine the teachings of Brendel and Agrawal to have dynamically selecting a server to which request data is to be sent based on estimates of processing load on server and total load for servers because it would have an efficient system that can provide specific functions in order servers do not run out of resources under the current measured load.

16. As to claim 11, Brendel teaches the invention as claimed, further comprising: a server load management table used to determine a server that said request data are to be sent to (see col.3, lines 18-55), wherein a server processing load resulting from said request data is estimated and a load status value in said server load management table is updated each time said load balancer receives said request data from said clients (see col.4, lines 23-33).

17. As to claim 12, Brendel teaches the invention as claimed, wherein said means for dynamically selecting a server selects a server with the lowest value in a load status field of said server load management table (see col.13, line 65 to col.14, line 7).

18. As to claim 13, Brendel teaches the invention as claimed, wherein said load status field corresponding to the selected server is updated with the estimated load evaluation value (see col.4, lines 23-33).

19. As to claim 14, Brendel teaches the invention as claimed, wherein said processing device comprises a server load management table used to determine a server that said request data are to be sent to (see col.3, lines 18-55), and further comprising the steps of estimating a server processing load resulting from said request data and updating a load status value in said server load management table each time said request data is received from said clients (see col.4, lines 23-33).

20. As to claim 15, Brendel teaches the invention as claimed, further comprising the step

of selecting a server with the lowest value in a load status field of said server load management table (see col.13, line 65 to col.14, line 7).

21. As to claim 16, Brendel teaches the invention as claimed, further comprising the step of updating said load status field corresponding to the selected server with the estimated load evaluation value (see col.4, lines 23-33).

22. As to claim 17, Brendel teaches the invention as claimed, wherein said processing device comprises a server load management table used to determine a server that said request data are to be sent to (see col.3, lines 18-55), and wherein said method further comprises the step of estimating a server processing load resulting from said request data and updating a load status value in said server load management table each time said request data is received from said clients (see col.4, lines 23-33).

23. As to claim 18, Brendel teaches the invention as claimed, wherein said method further comprises the step of selecting a server with the lowest value in a load status field of said server load management table (see col.13, line 65 to col.14, line 7).

24. As to claim 19, Brendel teaches the invention as claimed, wherein said method further comprises the step of updating said load status field corresponding to the selected server with the estimated load evaluation value (see col.4, lines 23-33).

Response to Arguments

25. Applicants argue that Brendel does not teach or suggest the load balancer ha a means

for storing totals of load estimates over a fixed past period. In response to Applicant's argument, the Patent Office maintain the rejection because Brendel does teach the load balancer ha a means for storing totals of load estimates over a fixed past period as shown in col.11, lines 50-65 and col.12, lines 30-40. Brendel clearly shows the load balancer ha a means for storing totals of load estimates over a fixed past period.

Conclusion

26. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

27. Any inquiries concerning this communication or earlier communications from the examiner should be directed to **Tammy T. Nguyen** who may be reached via telephone at **(571 272-3929)**. The examiner can normally be reached Monday through Friday between 8:00 a.m. and 6:00 p.m. eastern standard time.

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If you need to send the Examiner, a facsimile transmission regarding this instant application, please send it to **(703) 872-9306**. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's Supervisor, David Wiley, may be reached at **(571) 272-3923**.

TTN

July 6, 2005



DAVID WILEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100